



DEVELOPMENTAL DISTURBANCES OF ORAL & PARAORAL STRUCTURES

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▪ A congenital disease is present at or before birth but is not necessarily inherited. In 60% of congenital malformation the cause is unknown, 15% are hereditary, 5 % are environmental teratogenes and 20% are of multifactorial causes.



■ **Hereditary (genetic)** i.e.
transmitted from ancestors to
parents to child.
E.g *Teacher Collins syndrome* is a
congenital anomaly of hereditary
origin

■ **Developmental** :belonging to the
process of development.

- **Acquired:**

It means a condition which is not present at birth but develops in individuals by some environmental factors.

- **Teratogenic:**

Is any agent that can induce or increase the incidence of a congenital malformation i.e. capable of producing abnormal development (prior to birth) that may lead to growth retardation, malformations, functional disorders or death.



Developmental Disturbances of the Jaws

1- Agnathia

It is an extremely rare congenital defect characterized by:

Complete or partial absence of upper or lower jaws or more commonly a portion of the jaw as one side of the mandible (the condyle, ramus, premaxilla).





2-Micrognathia

Is the presence of a small jaw, either maxilla or mandible.

- a) Relative (apparent) due to posterior positioning of the mandible with regard to the skull.
- b) True micrognathia: It can be congenital and associated with other abnormalities (**Pierre Robin syndrome**). Micrognathia of the maxilla is usually due to a deficient premaxilla.



Pierre Robin syndrome

Is characterized by:

- The underdevelopment of the mandible.
- Falling back of the tongue obstructing laryngeal inlet causing cyanosis and asphyxia.
- It is also associated with cleft palate and bifid tongue.



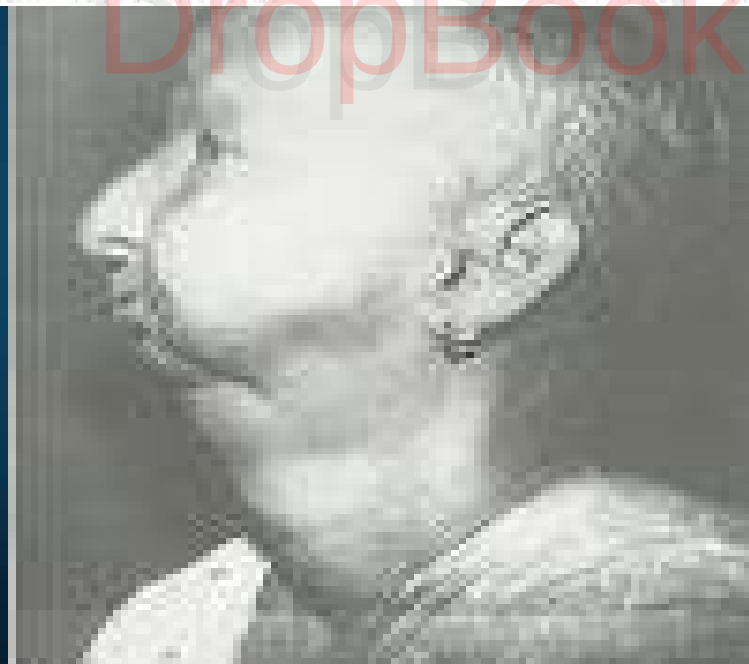
c) Acquired: postnatal in origin due to trauma or infection that destroys the condylar growth center at an early age. So disturbed mandibular growth occurs with or without joint ankylosis (bird face).



micrognathia, Robin anomalad



severe micrognathia, beaked nose



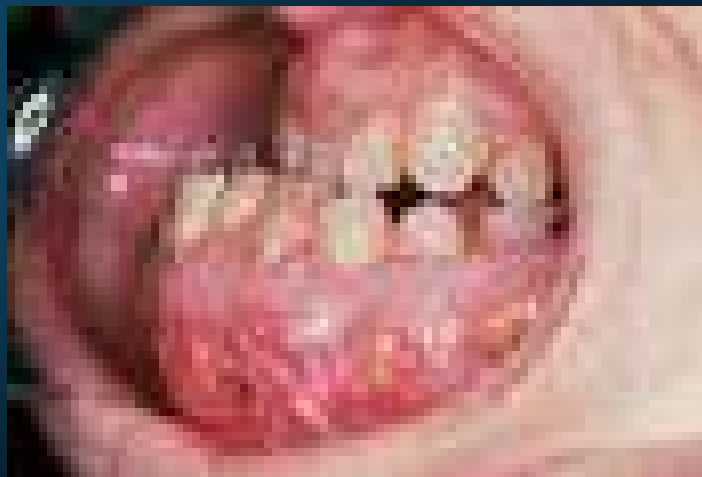


3- Macrogathia

- **An abnormally large jaw. As micrognathia it could be either true or relative.**
- **Several reasons are attributed to macrogathia**
 - **Pituitary gigantism: entire skeleton is increase in size.**
 - **Paget's disease of bone: increase in maxillary size.**
 - **Acromegaly: increase mandible size in hyperpituitarism in adults**



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4- Facial hemihypertrophy

It is a very mild degree of imperceptible asymmetry in nearly all persons.

A *congenital hemihypertrophy* may occur involving:

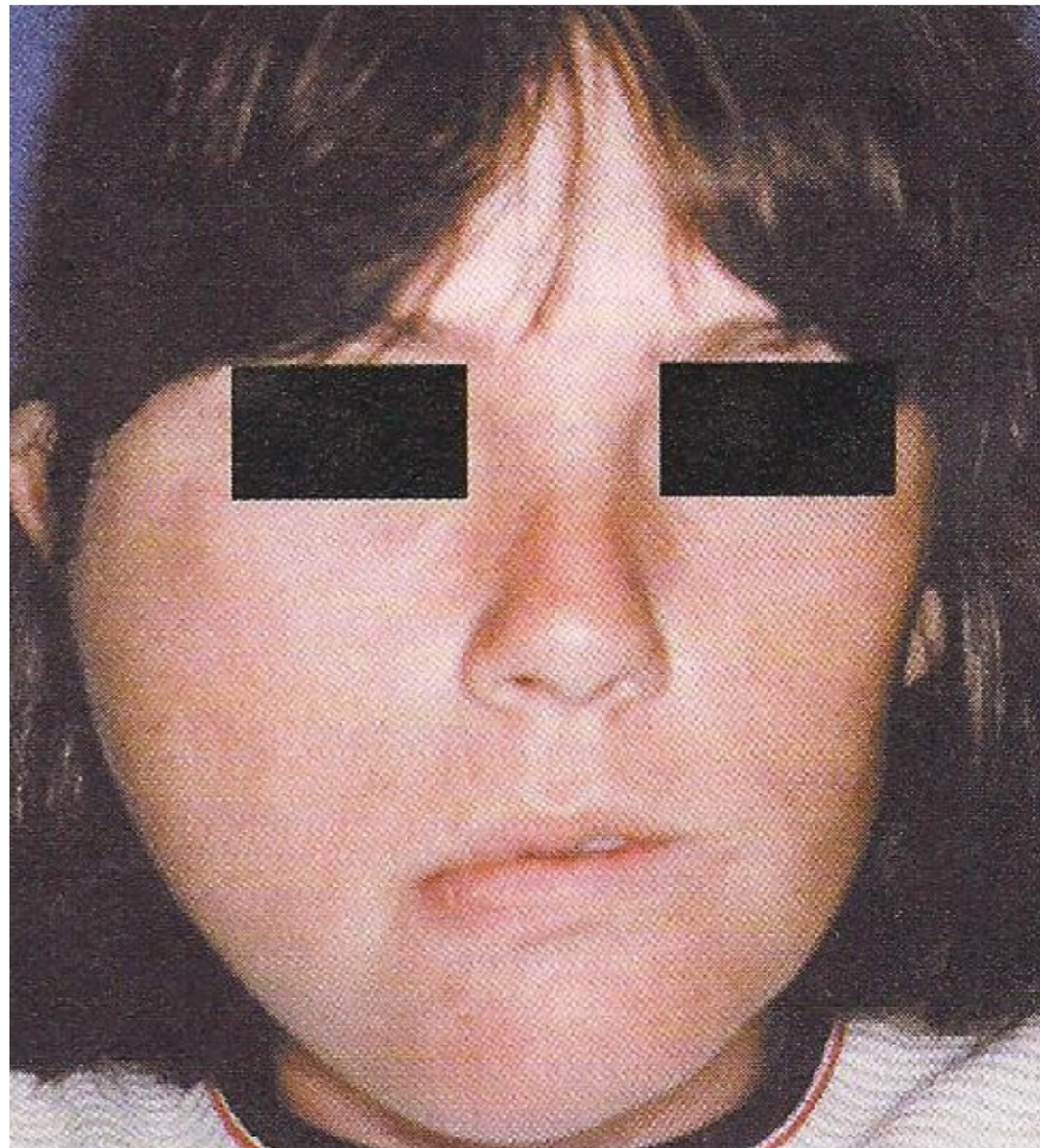
- a) Entire half of the body.
- b) One or both limbs.
- c) Face and head.

The etiology is unknown but it could be related to a vascular or neurogenic abnormality.



Clinically

- It is common in females than males.
- One side of the head is enlarged, even at birth, and grows at higher rate more than the other side, so the disproportion is maintained throughout life.

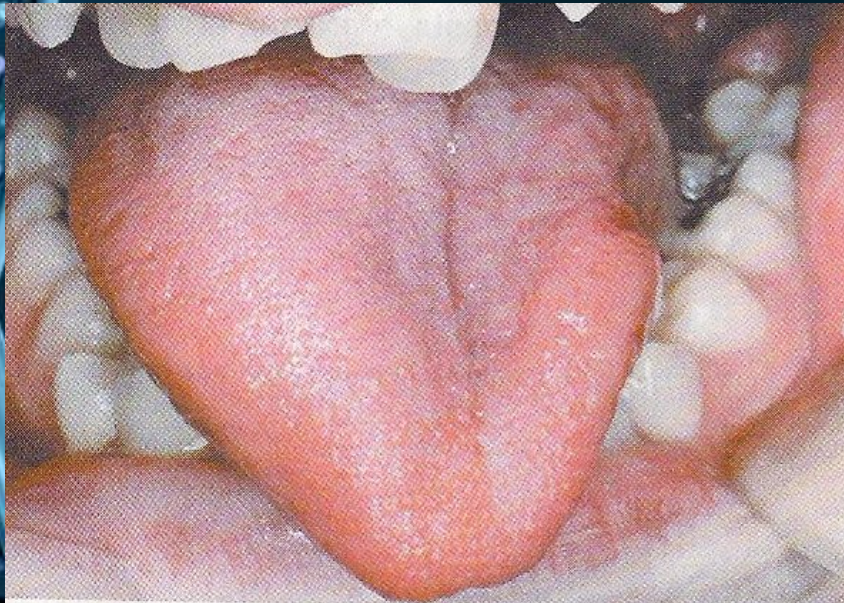




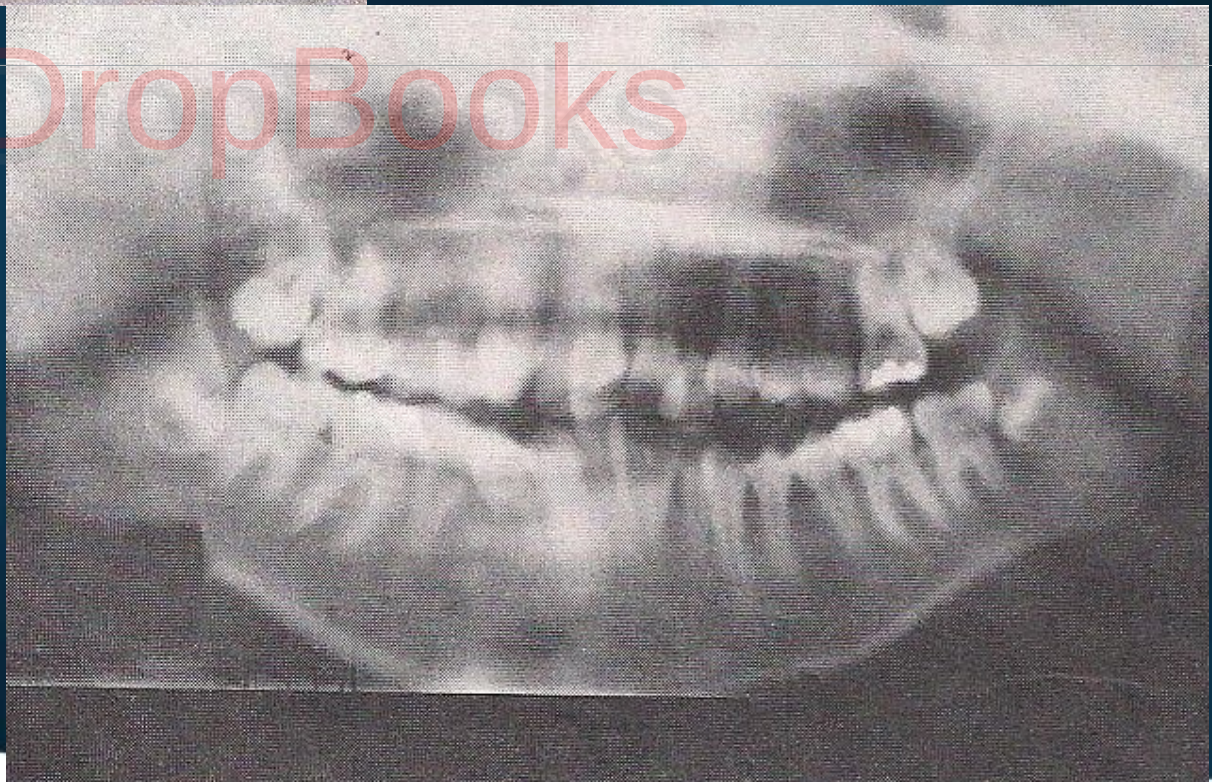
Oral manifestations:

- **The permanent teeth on the affected site are enlarged (crown and roots) especially the canine, premolars and the first molar.**
- **They develop more rapidly and erupt earlier with premature shedding of deciduous teeth.**

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- The bone of the maxilla and the mandible is also enlarged, being wider and thicker sometimes with an altered trabecular pattern.
 - The tongue in the affected side is enlarged and shows a bizarre picture of lingual papillae enlargement.
 - The buccal mucosa appears velvety and may seem to hang in soft, pendulous folds on the affected side.



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Treatment

Cosmetic repair.

Differential diagnosis: fibrous dysplasia, but the rate of eruption and the teeth size is normal.



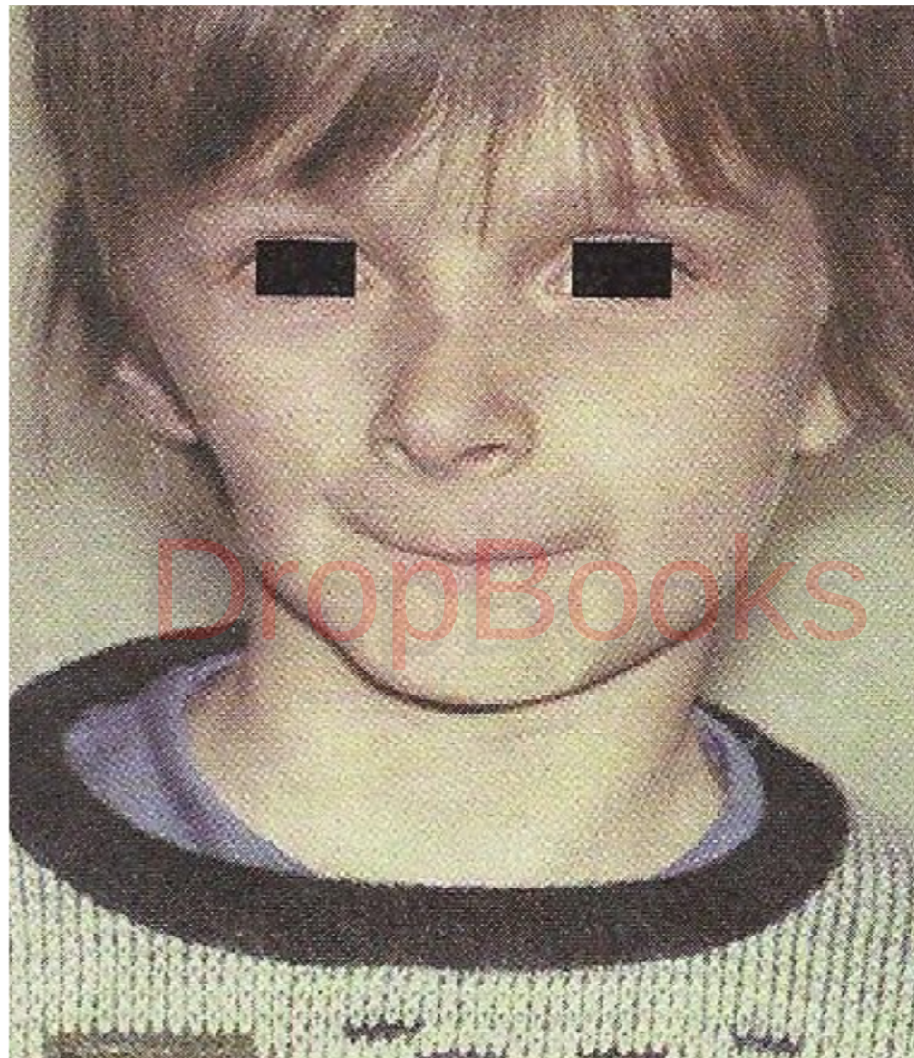
5- Facial hemiatrophy

It is the progressive atrophy of some or all tissues on one side of the face and occasionally extends to other parts of the body.



Etiology

It is unknown, but it could be due to trauma, infection, localized scleroderma, peripheral trigeminal neuritis.





II - Development Disturbances of lips and palate

1-Congenital pits and fistulas

These malformations are hereditary. It can occur alone or with other developmental anomalies such as cleft lip and/or palate.



Etiology

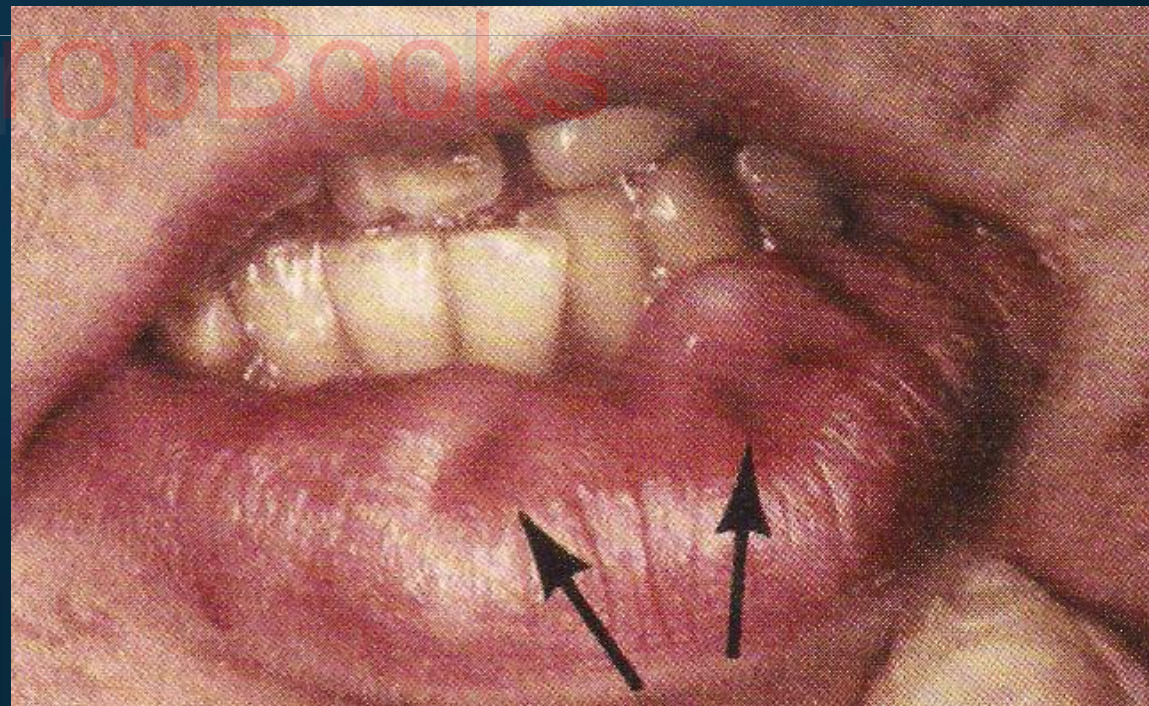
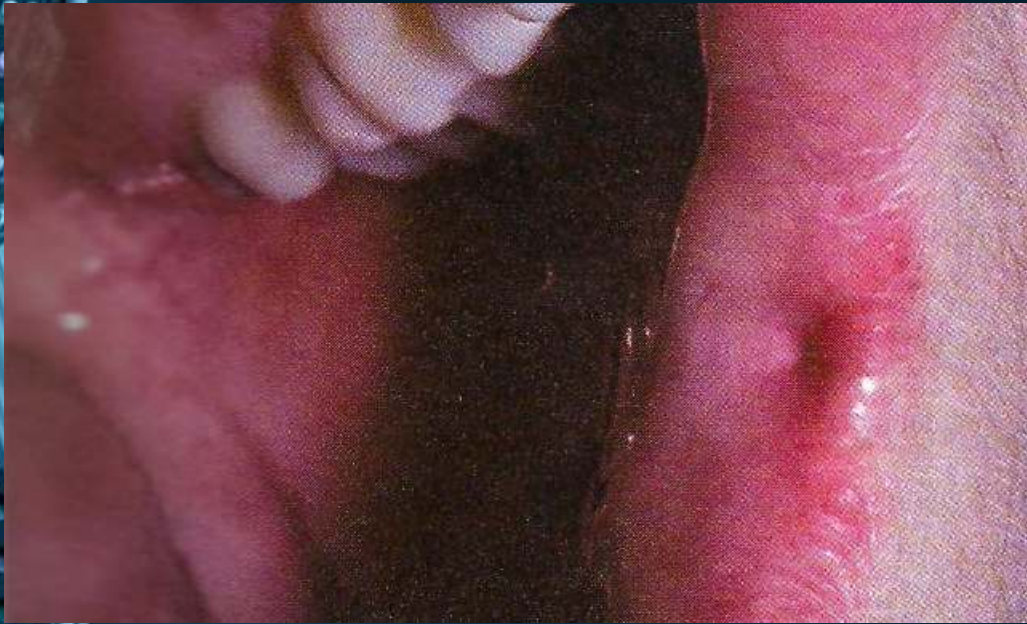
- **Pits may result from notching of the lip at an early stage of development.**
- **Failure of complete union of embryonic lip tissues(lateral sulci).**
- **Commissural pits may be due to defective development of the horizontal facial cleft.**



Clinical picture

Lip pit

- The lip pit or fistula is unilateral or bilateral depression
- Occurs on the vermillion border near the midline of either lip.
- It is more commonly in the lower lip.
- Sparse mucous secretions may exude from the base of this pit.





2- Double lip

It is an anomaly characterized by a fold of excess tissue on the inner mucosal aspect of the lip. It may be congenital or acquired as a result of trauma of the lip.



Clinical picture

- **The redundant tissue mass usually occurs in the upper lip, although lower lip may be also affected.**
- **The condition is not seen when the lips are in rest**

Treatment:

excision for cosmetic, speech and mastication.



Figure 1 - Double upper lip



3- Cleft lip and cleft palate

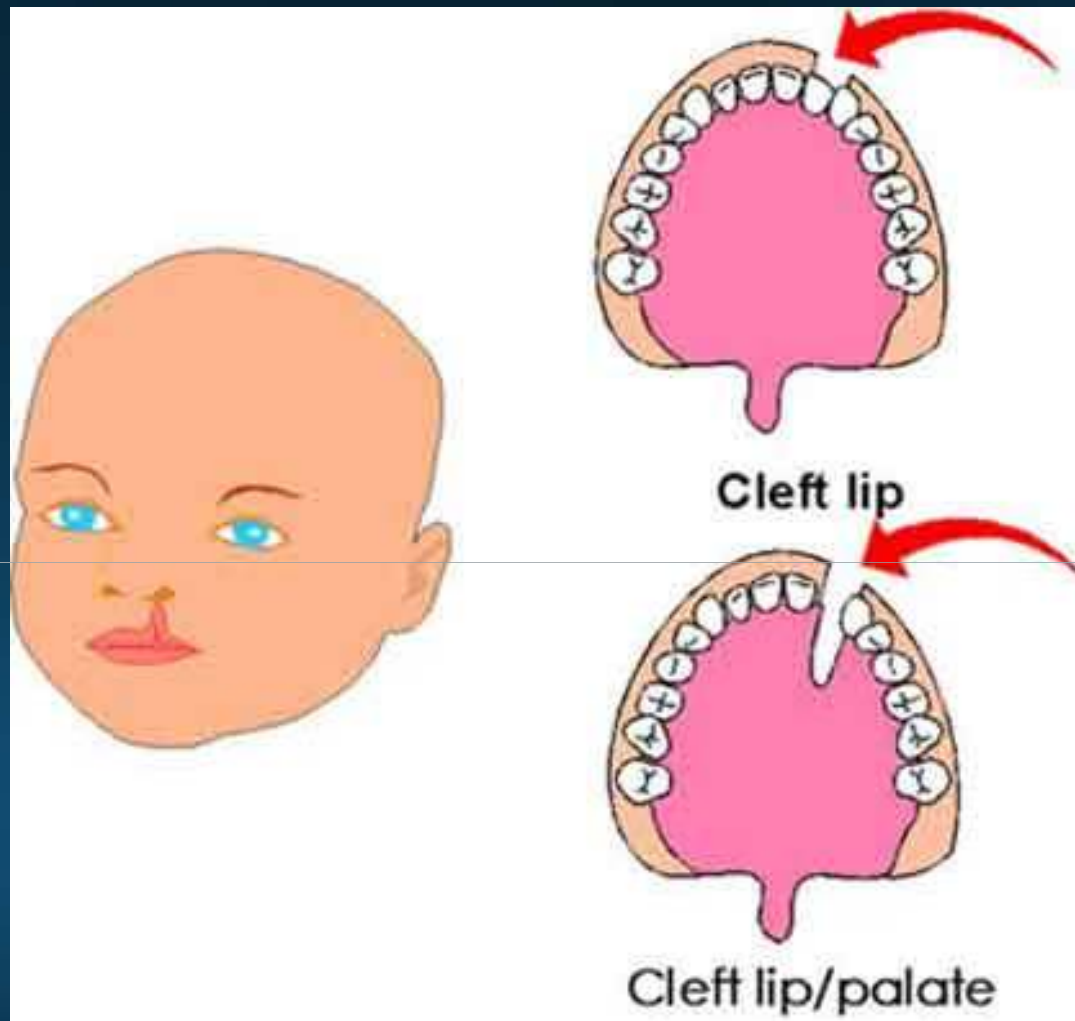
- **Facial clefts are congenital anomalies that occur along many planes of the face as a result of defects in the development or maturation of the embryonic processes.**
- **They result in functional defect of speech, mastication and deglutition.**



Etiology

- *Cleft lip* occurs in the sixth-seventh week in utero due to failure of epithelial groove between median and lateral nasal processes to be penetrated by mesodermal cells.





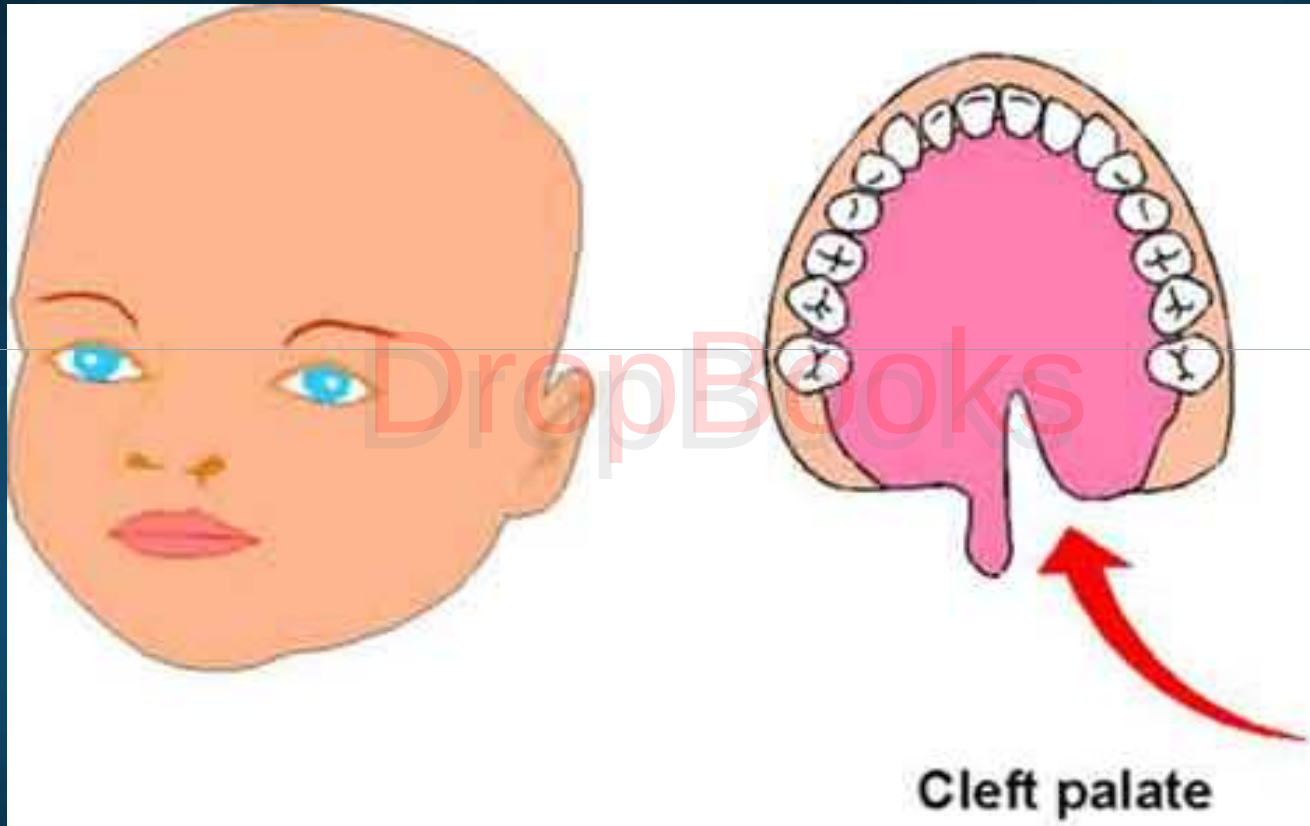


Cleft palate appears to represent a disturbance in the normal fusion of the palatal shelves.

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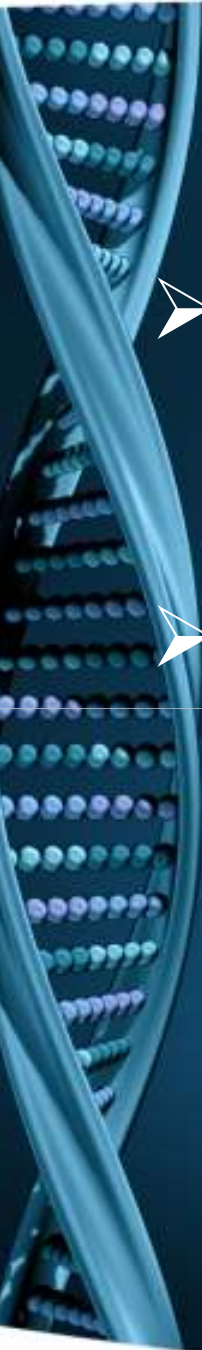




Cleft palate

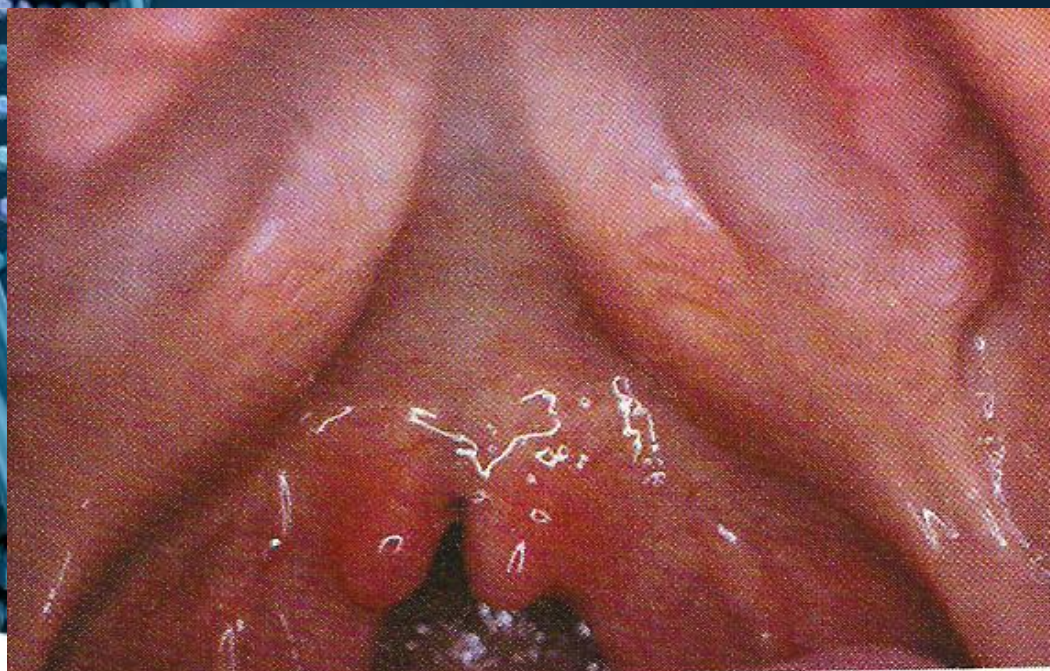
Failure to unite may be due to:

- **Lack of inherent developmental force.**
- **Defective vascular supply to the involved area.**
- **Mechanical disturbance in which the size of the tongue may prevent the union of parts.**
- **Circulating substances such as alcohol, certain drugs and toxins.**
- **Infection.**

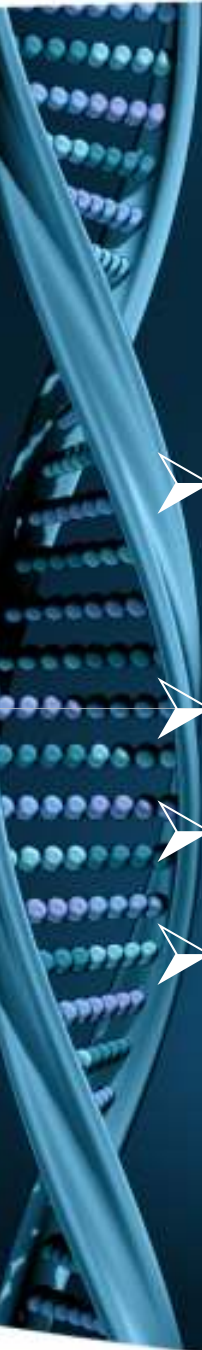


Clinical picture

- A Mandibular cleft lip is extremely rare, but when occurs it is usually in the midline.
- A maxillary cleft lip may vary from a pit or small notch on the vermillion border to a complete cleft of the lip, muscles, alveolus and entire palate, or it may extend to the floor of the nose.







Cleft palate may exhibit wide variation in the degree of severity and the involvement of tissue in the form of:

- **Bifid uvula which is the mildest form of cleft.**
- **Cleft of the soft palate only.**
- **Cleft of both soft and hard palates.**
- **Cleft of the hard palate that extends anteriorly through the alveolar ridge and lip producing complete cleft in the lip, ridge and palate.**



Dental Changes

- Congenitally missing teeth especially deciduous and permanent maxillary lateral incisors.
- In other cases, the teeth divide giving rise to supernumerary teeth especially lateral incisors.
- Enamel hypoplasia, microdontia, macrodontia and fused teeth are seen.

N.B. Cleft lip is commonly associated with lip pits.



Complications

1. Esthetic

2. Regurgitation of food and liquid through the nose.

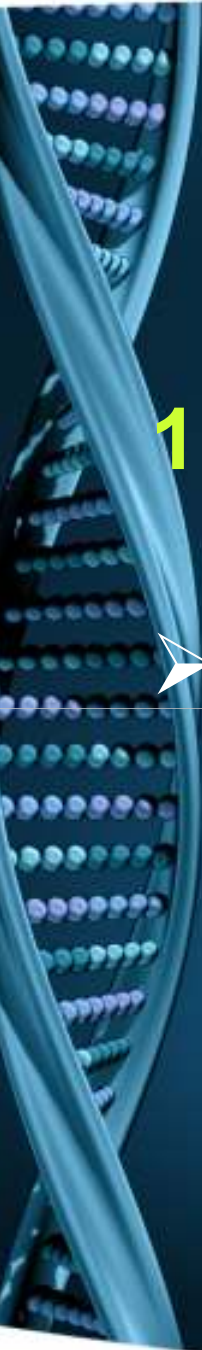
3. Speech has a hypernasal quality.

4. Hearing problems (Otitis media, Eustachian tube dysfunction).



Treatment

- 1)Cleft lip repair at the first month.**
- 2)Orthodontic treatment.**
- 3)Closure of the soft palate at 18th month.**
- 4)Obturators to prevent regurgitation.**
- 5)Correction of the developmental dental defects.**
- 6)ENT.**



III-Developmental Disturbances of the oral mucosa

1- Fordyce's granules (Fordyce's disease)

- It is not a disease of the oral mucosa but a developmental anomaly characterized by heterotopic collections of sebaceous glands intraorally.

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- This can be due to inclusion in the oral cavity of ectodermal elements having some potentialities of skin during embryonic life.





Histopathology

- These heterotopic sebaceous glands are identical to those seen in the skin but are not associated with hair follicles.
- The glands are grouped around one or more ducts which open on the mucosal surface and may show keratin plugs. The cells are granular with clear cytoplasm and pyknotic nuclei.





Differential diagnosis

Clusters of *Candida albicans*

however, by wiping they do not disappear as would be the case with *Candida albicans*.

Treatment

No treatment is done.



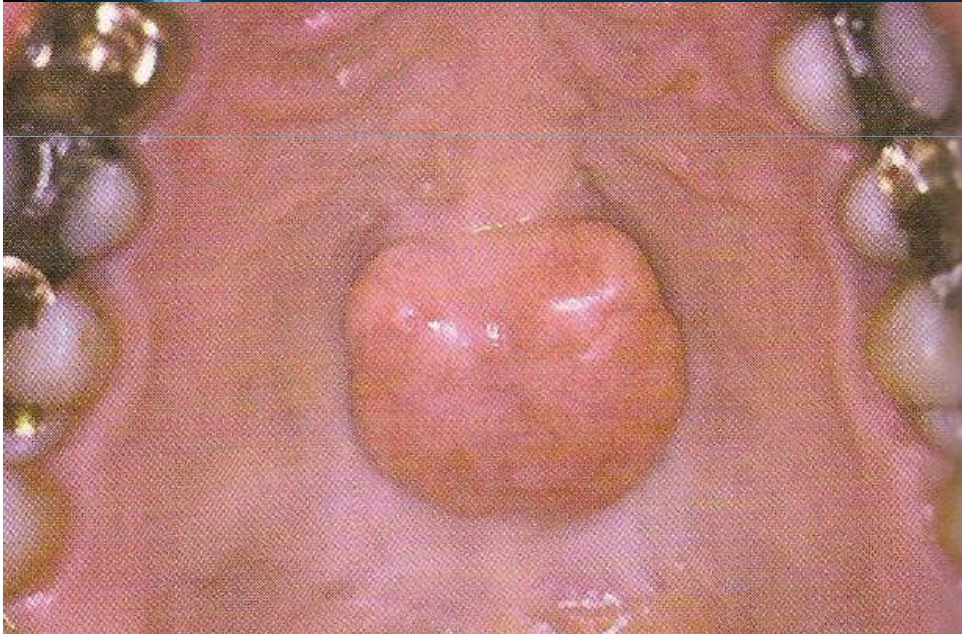
2- Torus palatinus

- **A hereditary condition that occurs in the midline of the palate.**
- **It is either flat, spindle, lobulated or nodular.**
- **The covering mucosa is intact but thin and may become ulcerated if traumatized**
- **It has a higher incidence in Americans Indians and Eskimos.**



Microscopically

It is composed of compact bone or a core of cancellous covered by compact bone.





Treatment

No treatment is needed except if it interferes with denture stability (surgery).

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3-Torus mandibularis

- **A hereditary condition**
- **Occurs on the lingual surface of the mandible above the mylohyoid, opposite the bicuspid teeth.**
- **It is usually bilaterally.**
- **It is of a higher incidence in Eskimos.**

Treatment

Surgical removal is needed for denture construction







4- Multiple exostosis

- They are less common than tori
- Unknown etiology.
- Buccal surface of the maxilla in the molar region.
- Exostoses occur as a small nodular protuberance covered by a thin blanched mucosa.

Treatment

Surgical removal is need for denture construction.

